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ABSTRACT

This book was written as a resource for middle and high school teachers hoping to ease their students' transition to algebra. Drawing on experiences with three professional development programs, key "habits of thinking" that characterize the successful learning and use of algebra are outlined. Strategies teachers can use to cultivate these habits of thinking and guidelines for assessing students' development are presented. The book is organized according to the critical challenges algebra teachers face such as: How can they help students build on number sense and arithmetic skills to develop their algebraic thinking? What kinds of questions can foster algebraic thinking? and When is it best to use them? Excerpts from discussions among the classroom teachers who participated in the professional development projects are used to place these issues in context. Each chapter also includes activities to encourage teachers to reflect on how they think about algebra and how that thinking informs their practice. There are also samples and analyses of student work to help teachers identify patterns of algebraic thinking along with questions and strategies that can be used to guide and extend students' thinking. (MM)

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